

# **THE POCKET ANATOMY**

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The pocket anatomy by C. H. Fagge

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**C. H. FAGGE**

**THE POCKET  
ANATOMY**



## PREFACE

IN compiling this edition I have borrowed from Quain's 'Anatomy,' Cunningham's 'Text-book of Anatomy,' and Morris's 'Treatise of Anatomy.' It therefore seems that the old name of 'The Pocket Gray' no longer accurately describes this little volume, so on the advice of the publishers it has been altered to that of 'The Pocket Anatomy.'

The whole book has been carefully revised, and many descriptions have been changed, among which the chief is the substitution of Jonnesco's account of the iliac and pelvic colon and rectum for that of the sigmoid and rectum of previous editions.

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# THE POCKET ANATOMY

## THE ARTICULATIONS.

### The Classification of Joints.

**Synarthrosis** (Immovable Joint).

*Varieties* :—

Sutura.

*Sub-varieties* :—

- S. Dentata.
- S. Serrata.
- S. Limbosa.
- S. Squamosa.
- S. Harmonia.

Synchondrosis—may become a Synostosis.

Schindylesis.

Gomphosis.

**Amphiarthrosis** (allowing slight movement).

*Varieties* :—

Symphysis.

Syndesmosis.

**Diarthrosis** (Movable Joint).

*Varieties* :—

Arthrodia, or Gliding Joint.

Enarthrosis, or Ball-and-Socket Joint.

Ginglymus, or Hinge Joint.

Condyloid.

Reciprocal Reception, or Saddle Joint.

Trochoid, or Pivot Joint.

## ARTICULATIONS OF THE TRUNK.

### I.—ARTICULATIONS OF THE VERTEBRAL COLUMN.

- (A) Joints between the bodies which are amphiarthroses.
- (B) Joints between the neural arches by means of the

articular processes which are diarthroses of the arthrodial variety.

(A) *The Ligaments of the Bodies.*

The **anterior common ligament**: a broad band of fibres, extending along front of bodies of vertebræ, from axis to sacrum. It consists of two sets of fibres, *superficial* and *deep*: the former extending between the bodies of two or more vertebræ, the latter only between adjacent vertebræ. The fibres are attached principally to the intervertebral substances.

The **posterior common ligament** is within the spinal canal, and extends along back of bodies of the vertebræ from axis to sacrum, being broad opposite the intervertebral discs, and narrow opposite the bodies, except in the neck, where it is as wide as the bodies. It is attached to the discs and contiguous parts of the bodies of the vertebræ.

The **intervertebral substances**, found between the vertebræ from axis to sacrum. The circumference of each consists of layers of oblique parallel fibres of white fibrous tissue, enclosing a central part of pulpy elastic material. They are thickest in the lumbar region, and they give the peculiar curves to the column by their differences in thickness.

(B) *The Ligaments of the Laminae.*

The **ligamenta subflava** connect the laminae of the vertebræ from the axis to the sacrum. Each ligament is attached to the anterior inferior edge of the lamina above, and to the posterior superior edge of the lamina below.

*The Ligaments of the Articular Processes.*

**Capsular ligaments** surround the articular processes, those in the cervical region being the loosest. Each is lined by a **synovial membrane**.

*The Ligaments of the Spinous Processes.*

The **interspinous ligaments** extend in all regions of the vertebral column between the spinous processes of the vertebræ, running from root to apex.

The **supraspinous ligament**: a fibrous cord, joining the tips of the vertebræ, and extending from the seventh cervical to the first sacral.

The **ligamentum nuchæ** continues the supraspinous ligament upwards. It consists of a *superficial* layer, extending from the spine of the seventh cervical to the external occipital protuberance, and a *deep* layer attached to the spines of the cervical vertebræ and the occipital crest.

*The Ligaments of the Transverse Processes.*

**Intertransverse ligaments** extend between the transverse

processes, often absent in the cervical, thin in the lumbar, but round and well marked in the dorsal region.

#### II.—ARTICULATION OF ATLAS WITH AXIS.

The **atlo-axoid articulation** consists of four joints—(a) a pivot joint consisting of two parts, (i.) between odontoid process and anterior arch of atlas, and (ii.) between odontoid process and transverse ligament; (b) two arthroidal, between the articular processes.

The **anterior atlo-axoid ligament** consists of a superficial and a deep part. The *superficial* part continues the anterior common ligament. It is attached above to the anterior tubercle of the atlas; and below to the body of the axis and base of the odontoid process. The *deep* part is broad, and reaches from the lower border of the anterior arch of atlas to the base of odontoid process and body of axis.

The **posterior atlo-axoid ligament**: a thin layer, connected above to the lower border of the posterior arch of atlas, and below to the upper edge of laminae of axis, pierced by the second cervical nerve.

The **transverse ligament** keeps the odontoid process in its place; it is attached on each side to a tubercle on the inner surface of the superior auricular process of the atlas. A thin bundle of fibres passes upwards from the middle of the posterior surface to the basilar process, and a like process downwards to the body of the axis. These two processes, together with the transverse ligament, form the *cruciform* ligament.

**Capsular ligaments** as in ordinary vertebrae, but supplemented at the posterior and inner part by an accessory ligament passing downwards and inwards to the base of the odontoid process (*accessory atlo-axoid ligaments*).

**Synovial membranes**: besides those of capsular ligaments, two; one in front and one behind the odontoid process, the latter often communicating laterally with one of the occipito-atloid joints.

#### III.—ARTICULATION OF ATLAS WITH OCCIPITAL BONE.

The **anterior occipito-atloid ligament** consists of a superficial and a deep part. The *superficial*, rounded, passes from the basilar process of the occiput to the anterior tubercle of the atlas. The *deep* part is broad, and attached above to the anterior edge of the foramen magnum, and below to the upper margin of anterior arch of atlas.



The posterior occipito-atloid ligament, thin and membranous, is attached above to posterior margin of foramen magnum; below, to upper border of posterior arch of atlas. (*Perforated on each side by vertebral artery and suboccipital or first cervical nerve.*)

The lateral occipito-atloid ligaments: one on each side; attached above to the jugular process of occiput, and below to the base of atlantal transverse process.

Capsular ligaments as in ordinary vertebræ.

#### IV.—LIGAMENTS BETWEEN THE AXIS AND OCCIPITAL BONE.

The occipito-axoid ligament (*apparatus ligamentosus colli*): a continuation of the posterior common ligament, connected above with basilar groove of occiput, and below to posterior surface of the body of axis.

The odontoid or check ligaments consist of two cords passing from the sides of the apex of the odontoid process to the rough surface on the inner side of each condyle of the occipital bone. In the interval between the two the *ligamentum suspensorium dentis* passes from the apex of the odontoid process to the anterior margin of the foramen magnum.

#### V.—TEMPORO-MAXILLARY ARTICULATION.

The condyle of the lower jaw articulates with the anterior part of the glenoid fossa, and with the eminentia articularis of the temporal bone, the joint being divided into an upper and a lower synovial cavity by an interarticular fibro-cartilage.

The external lateral ligament, attached above to tubercle and lower border of zygoma; below, to outer surface and posterior edge of neck of lower jaw.

The internal lateral ligament is attached above to the spinous process of the sphenoid, and below to the inner margin or lingula of the dental foramen of lower jaw.

The capsular ligament: thin and loose, attached above to the edge of anterior half of glenoid cavity and articular eminence; below, it surrounds neck of the condyle.

The interarticular fibro-cartilage has an oval shape; the upper surface is concavo-convex from before backwards, and slightly convex transversely; the lower surface is concave; the edge is attached to the capsule, and part of the external pterygoid muscle is inserted into its anterior margin.

Synovial membranes, two in number, one above and one below the fibro-cartilage; the upper being the larger.

The stylo-maxillary ligament: a band of fibrous tissue

extending from the styloid process to angle and posterior border of ramus of the jaw, which is derived from the deep cervical fascia (p. 26).

(*Stylo-hyoid ligament*: a fibrous cord extending from the styloid process to small cornu of hyoid bone).

#### VI.—ARTICULATION OF THE RIBS WITH THE VERTEBRÆ.

(a) *Articulations between the Heads of the Ribs and the Bodies of the Vertebrae.*

Arthro-dial joints held together by the following ligaments:—

The **anterior costo-vertebral** or **stellate ligament** is composed of three fasciculi, which radiate from the anterior surface of the head of the rib. The *superior* fasciculus passes to the body of the vertebra above; the *inferior* fasciculus to the body of the vertebra below; the *middle* fasciculus to the intervertebral substance.

A **capsular ligament** surrounds articulation between the head of the rib and the articular surface formed by two vertebrae.

The **interarticular ligament** divides the joint into two parts, each of which has a separate *synovial membrane*. It passes between ridge on head of rib and intervertebral substance. (Absent in the 1st, 10th, 11th, and 12th ribs.)

(b) *Articulations of the Necks and Tubercles of the Ribs with the Transverse Processes of the Vertebrae.*

Arthro-dial joints held together by the following ligaments:

The **anterior or superior costo-transverse ligament** passes from the upper border of neck of rib, to lower border of transverse process above. (Absent in 1st rib.)

The **middle costo-transverse** or **interosseous ligament**: a short thick band passing from the anterior surface of the transverse process to the posterior surface of neck of corresponding rib. (Rudimentary in 11th and 12th ribs.)

The **posterior costo-transverse ligament** passes from apex of transverse process to rough non-articular part of tubercle of rib. (Absent in 11th and 12th ribs.)

The **capsular ligament** surrounds articular surfaces, enclosing a small *synovial membrane*. (This articulation is absent in the 11th and 12th ribs.)

#### VII.—ARTICULATION OF THE UPPER SEVEN COSTAL CARTILAGES WITH THE STERNUM.

The **anterior chondro-sternal ligament**: a broad thin band, radiating from extremity of the rib cartilage to the sternum.

The *superior* fasciculi pass obliquely upwards, the *inferior* downwards, and the *middle* horizontally.

The **posterior chondro-sternal ligament** is an indistinct band of fibres radiating from the posterior surface of the inner end of the costal cartilage to the back of the sternum.

The **capsular ligament** surrounds the joint, and encloses a synovial membrane (In the 1st there is no synovial membrane; in the 2nd and 3rd there are 2, the joint being divided by an interarticular ligament passing between end of the costal cartilage and cartilage between adjacent pieces of the sternum. (The 4th, 5th, 6th, and 7th have one each.)

#### VIII.—ARTICULATIONS OF THE CARTILAGES OF THE RIBS WITH EACH OTHER.

The cartilages of the 6th, 7th, and 8th ribs articulate with each other by an oval-shaped facet, each having a capsule enclosing a synovial membrane.

#### IX.—ARTICULATIONS OF THE RIBS WITH THEIR CARTILAGES.

The costal end of each cartilage fits into a depression in the sternal end of the rib, and is bound down by periosteum.

#### X.—ARTICULATIONS OF THE STERNUM.

The 1st and 2nd pieces are united by a piece of cartilage, kept together by the following two ligaments:—

The **anterior intersternal ligament** consists of longitudinal fibres, which blend with the costo-sternal ligaments.

The **posterior intersternal ligament**: similar to the preceding, placed on the back of the sternum.

#### XI.—ARTICULATION OF THE PELVIS WITH THE SPINE.

The following ligaments connect the 5th lumbar vertebra with the sacrum, and are similar to the common vertebral ones:—

1. The continuations of the **anterior and posterior common ligaments**.

2. The **intervertebral substance** between the last lumbar vertebra and the sacrum.

3. The **ligamenta subflava** between the laminae of the last lumbar vertebra and the margins of upper opening of the sacral canal.

4. **Capsular ligaments**, between the articular processes.

5. **Interspinous and supraspinous ligaments**.

Besides these, there are the following special ligaments:

The **lumbo-sacral or sacro-vertebral ligament**: attached above to the front of tip of transverse process of the 5th